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EXAMINER

SEVER, ANDREW T

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2851

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/752,955	Applicant(s) RAMACHANDRAN ET AL.	
	Examiner Andrew T. Sever	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-21,23-38,43 and 44 is/are pending in the application.
- 4a) Of the above claim(s) 13-15 and 31-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-12,16-21,23-30,34-38,43 and 44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/13/2007 has been entered.

Election/Restrictions

2. Claims 13-15 and 31-33 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 4/25/2005.

Information Disclosure Statement

3. Applicant's Information Disclosure Statement received on 3/26/2007 has been reviewed and considered as noted on the attached signed copy of the for 1449. It was noted that the

Art Unit: 2851

second entry (US 6,795,225) on the first page had the incorrect name of patentee or applicant of cited document. The incorrect name has been crossed out and the correct name has been written in beside it (Tsuboi et al.).

Claim Objections

4. Claims 4, 5, and 17 are objected to because of the following informalities: claim 1 of which claims 4, 5 and 17 are dependent on no longer includes a limitation of at least one curved mirror. Appropriate correction is required.

It appears that claims 4, 5, and 17 should be made dependent on claim 43, which now includes the limitations with regards to a curved mirror.

5. Claim 43 is objected to because of the following informality; claim 43 recites the limitation "said at least one curved mirror" in claim 1. There is no curved mirror in claim 1. Appropriate correction is required.

It appears that applicant amendment to claim 1 deleted the reference to a curved mirror. Appropriate correction is required. It should be noted that if applicant amends claim 1 to include reference to a curved mirror it will potentially be rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Raskar and Tejima et al.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (US 2002/0075459) in view of Raskar (US 6,520,647.)

With regards to applicant's claim 1:

Lin teaches in figure 2 an off-axis projection system for display an image on a display surface (11) based on input image data, comprising:

A projection light engine (13 which is specified in paragraph 4 can be any projector from different makers) projecting a two-dimensional image to create a projected image that corresponds to image data (see paragraph 6 which describes the projector including a processor for receiving the image and as indicated by the arrows from the

Art Unit: 2851

projector (13) to the mirror (15) to the screen (11), the projector projects an image onto the display surface (screen 11); and

An optical reflection assembly (15 is specified in paragraph 13 to be a reflecting mirror) coupled to the projection engine adapted to direct the projected image onto the display surface.

Lin does not teach the internal structure of the projector nor its image-processing unit.

Raskar teaches a method for correcting keystone in a projector arbitrarily oriented with respect to a display surface (see column 1 lines 61-64; it should be noted that the holder of Lin is specified to arbitrarily orient the projector to the mirrors based on a user's preference see paragraph 6 of Lin, the last two sentences.) Raskar teaches in column 1 lines 19-25 that image projectors include light engines which are often transmission LCD's which is a type of display device having a two-dimensional array of pixels (those of ordinary skill in the art at the time of the invention recognize that transmission LCD's are 2d modulators meeting applicant's claimed projection light engine display device means.) Raskar teaches in column 3 lines 45 through column 4 lines 24 a method for electronically warping the input image that based on the orientation of the projector. Raskar further states in column 4 lines 38-44 that by use of this method a projector can be placed in any orientation including upside down (which one of ordinary skill in the art at the time of the invention would recognize could be a possibility in the Lin system since a user can remove and replace the projector) and at various elevations while producing imager without optical and geometric distortion. Accordingly given that Lin teaches a

Art Unit: 2851

non-skilled user can place the projector in the projection system and then make elevation adjustment, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the projector of Raskar in the projection system of Lin, as the projector of Raskar can automatically correct by electronically warping the input data, the projected image so that it appears on the screen correctly oriented and without distortion resulting in an easier and more pleasurable viewing experience for the user using the system of Lin.

With regards to applicant's claim 6:

This is what the processing unit of Raskar does it takes the input image data and modifies it to have the correct aspect ratio and resolution and shaped to project a non-distorted image with proper orientation (see column 4 lines 38-44 of Raskar; although Raskar does not specifically address aspect ration and resolution it is inherent that in order to have a correct imagery without distortion such corrections would have to be made.) Given it is desirable to have correct imagery without distortion, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the processing unit of Raskar which inherently performs corrections to aspect ratio and resolution.

With regards to applicants' claim 16:

The system of Lin is a rear projection system when the projector is installed inside it.

Art Unit: 2851

9. Claims 3, 17, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Raskar as applied to claim 1 above, and further in view of Tejima et al. (US 5,274,406 as cited in previous office actions.)

Claim 43 will be addressed first for clarity.

With regards to applicant's claim 43:

Lin in view of Raskar teaches a projection system, which among other things includes a reflective mirror, however Lin in view of Raskar does not teach that the mirror is curved nor that said mirror comprises an aspherical rotationally non-symmetric mirror with specific orientation and curvature. Tajima teaches in figure 13c a projector system similar to that of Lin in view of Raskar. Figure 14a of Tajima shows a mirrored surface that is curved in the claimed manner. Tajima teaches in column 4 lines 35-59 that rear projection displays such as Lin can be made thinner if the distortion caused by the inclination of the optical axis of the projection lens is compensated for. The curved mirror taught by Tajima in figure 13c compensates for the distortion caused by the inclination allowing for a much thinner display. Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the mirror of Tejima in the projection system of Lin in view of Raskar as this allows for a much thinner display that can be achieved by other means resulting in less floor space being taken up by the rear projection unit.

With regards to applicant's claim 3:

See figure 13F and elsewhere of Tajima that teaches such an aspherical mirror, which would be obvious to use in the projection system of Lin in view of Raskar for the reasons given above.

With regards to applicant's claim 17:

See figure 15A of Tejima wherein the curved mirror of Tejima (figure 14a) is replaced with a Fresnel type mirror, see column 11 lines 54-61 which teach by using the Fresnel type mirror the projection system can be made even thinner; accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Fresnel type mirror in the projection system of Lin in view of Raskar.

10. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Raskar and Tajima as applied to claim 43 above (see the objection to claims 4 and 5), and further in view of Suzuki et al. (US 2004/0046944 as cited in the previous office actions.)

As discussed in more detail above Lin in view of Raskar and Tajima teaches a projection system which among other things includes a projection light engine and at least one curved mirror. Lin in view of Raskar and Tajima does not teach that a lens that is an aspherical rotationally non-symmetric lens positioned prior to the curved mirror. Suzuki teaches in figure 1 a projection optical system including a mirror (16) and a lens (15). Suzuki teaches in paragraphs 22-26 that the lens is an aspherical lens, which is designed to cancel the curvature of field of the reflecting part accordingly since it is desirable to

eliminate such aberrations it would have been obvious to include the lens of Suzuki in the projector of Lin in view of Raskar and Tajima as it is desirable to make the best aberration free image as possible.

11. Claims 7-12 rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Raskar as applied to claim 1 above, and further in view of Gale et al. (US 5,692,820.)

With regards to applicant's claim 7:

As described in more detail above Lin in view of Raskar teaches a projection system including a projection light engine, however Lin in view of Raskar do not specifically teach the details of the light engine other than some generalized components such as a light modulator and an inherent light generator. Gale teaches in figure 8a a light engine for a projector, which includes a light generator (602), a display device (606) and projection optics (605). Gale teaches in column 11 lines 53-58 that by using a projection lens with a bend such as that shown in figure 8a the optical depth and the housing depth can be reduced resulting in a more compact display device. As explained in column 9 line 62 through column 10 line 21 the use of a good lens with the display device of Gale results in a better picture. Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the light engine of Gale with the compact projection lens coupled to an appropriate modulator so that a high quality image can be produced on the display surface while maintaining a thin display.

Art Unit: 2851

With regards to applicant's claims 8 and 10

This is the purpose of the bend in Gale's lens as outlined column 11 lines 53-67 as well as column 12 lines 1-34. See above for the reasons why it would be obvious to use Gale's lens in the projection system of Lin in view of Raskar.

With regards to applicant's claim 9:

This is why Gale uses the lens that Gale does in figure 8a as explained in column 9 lines 62-through column 10 lines 21. See above for the reasons why it would be obvious to use Gale's lens in the projection system of Lin in view of Raskar.

With regards to applicant's claim 11:

The light generator of Gale is an illumination subsystem (it is a light source such as a lamp), the display is a micro-display (LCD see column 10 lines 1-14 it should also be noted the display in Raskar is an LCD) and the lens is made of a number of lens as described in column 11 lines 28-52 of Gale. Given Gale teaches that this combination of components made specific for the novel projection lens allows the projection light engine to produce a better image while being a compact as possible, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the lens, display device, and light generator of Gale in the projection system of Lin in view of Raskar in order to make a better image and a more compact projection system.

Art Unit: 2851

With regards to applicant's claim 12:

In view of the teachings of Raskar the micro-display is made to compensate for keystone and other spatial distortions (it should also be noted that the micro-display of Gale is specific for making the best image without aberration which would include shaping it to compensate for keystone and other spatial distortions.)

12. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Raskar as applied to claim 1 above, and further in view of Nishizawa (US 2004/0032982 as cited in the previous office actions.)

As described in more detail above Lin in view of Raskar teaches a projection system with image processing. However Lin in view of Raskar (specifically Raskar) does not specifically teach that image-processing unit comprises luminance correction stages. Nishizawa teaches in paragraphs 12-14 that it is beneficial for the image processing unit to include a luminance correction stage which individually process different spectral pass bands as claimed in applicant's claims 19 and 20. Nishizawa states that by making these corrections the unnatural image displayed by the prior art can be corrected for.

Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the luminance correction of Nishizawa in the image-processing unit of Lin in view of Raskar as this will allow for a better image with correct luminance.

Art Unit: 2851

13. Claims 21, 23, 34, 35, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (US 2002/0075459) in view of Raskar (US 6,520,647) and in view of Tejima et al. (US 5,274,406 as cited in previous office actions.)

With regards to applicant's claim 21 and 44:

Lin teaches in figure 2 an off-axis projection system, which during its normal and ordinary operation performs the method (see MPEP 2112.02) for displaying an image on a display surface (11) based on input image data, comprising:

Providing a projection light engine (13 which is specified in paragraph 4 can be any projector from different makers) projecting a two-dimensional image to create a projected image that corresponds to image data (see paragraph 6 which describes the projector including a processor for receiving the image and as indicated by the arrows from the projector (13) to the mirror (15) to the screen (11), the projector project an image onto the display surface (screen 11); and

Reflecting the projected image with an optical reflection assembly (15 is specified in paragraph 13 to be a reflecting mirror) coupled to the projection engine adapted to direct the projected image onto the display surface.

Lin does not teach the internal structure of the projector nor its image-processing unit and method. Raskar teaches a method for correcting keystone in a projector arbitrarily oriented with respect to a display surface (see column 1 lines 61-64; it should be noted that the holder of Lin is specified to arbitrarily orient the projector to the mirrors based on a user's preference see paragraph 6 of Lin, the last two sentences.) Raskar teaches in

column 1 lines 19-25 that image projectors include light engines which are often transmission LCD's which is a type of display device having a two-dimensional array of pixels (those of ordinary skill in the art at the time of the invention recognize that transmission LCD's are 2d modulators meeting applicant's claimed projection light engine display device means.) Raskar teaches in column 3 lines 45 through column 4 lines 24 a method for electronically warping the input image that based on the orientation of the projector. Raskar further states in column 4 lines 38-44 that by use of this method a projector can be placed in any orientation including upside down (which one of ordinary skill in the art at the time of the invention would recognize could be a possibility in the Lin system since a user can remove and replace the projector) and at various elevations while producing images without optical and geometric distortion. Accordingly given that Lin teaches a non-skilled user can place the projector in the projection system and then make elevation adjustment, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method and projector of Raskar in the projection system and method of using it of Lin, as the projector using the method of Raskar can automatically correct by electronically warping the input data, the projected image so that it appears on the screen correctly oriented and without distortion resulting in an easier and more pleasurable viewing experience for the user using the system of Lin.

Lin alone and or in view of Raskar does not teach that the step of reflecting include reflecting the light off a mirror that is curved nor that said mirror comprises an aspherical

rotationally non-symmetric mirror with specific orientation and curvature (as is claimed in applicant's claim 44). Tajima teaches in figure 13c a projector system similar to that of Lin in view of Raskar. Figure 14a of Tajima shows a mirrored surface that is curved in the claimed manner. Tajima teaches in column 4 lines 35-59 that rear projection displays such as Lin can be made thinner if the distortion caused by the inclination of the optical axis of the projection lens is compensated for. The curved mirror taught by Tajima in figure 13c compensates for the distortion caused by the inclination allowing for a much thinner display. Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the mirror of Tajima in the projection system of Lin alone or in view of Raskar that performs the method for displaying an optical image on a display surface, as this allows for a much thinner display that can be achieved by other means resulting in less floor space being taken up by the rear projection unit.

With regards to applicant's claim 23:

See figure 13F and elsewhere of Tajima that teaches such an aspherical mirror, which would be obvious to use in the projection system of Lin alone and in view of Raskar, which performs the projection method, described above for the reasons given above.

With regards to applicant's claim 34:

The system of Lin is a rear projection system when the projector is installed inside it. (The system of Tajima is also a rear projection system.)

Art Unit: 2851

With regards to applicant's claim 35:

See figure 15A of Tejima wherein the curved mirror of Tejima (figure 14a) is replaced with a Fresnel type mirror, see column 11 lines 54-61 which teach by using the Fresnel type mirror the projection system can be made even thinner; accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Fresnel type mirror to reflect light in the projection method of Lin alone and/or in view of Raskar.

14. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Raskar and Tajima as applied to claim 21 above (see the objection to claims 4 and 5), and further in view of Suzuki et al. (US 2004/0046944 as cited in the previous office actions.)

As discussed in more detail above Lin in view of Raskar and Tajima teaches a projection method which among other things includes providing a projection light engine and at least one curved mirror. Lin in view of Raskar and Tajima does not teach that a lens that is an aspherical rotationally non-symmetric lens positioned prior to the curved mirror. Suzuki teaches in figure 1 a projection optical system including a mirror (16) and a lens (15). Suzuki teaches in paragraphs 22-26 that the lens is an aspherical lens, which is designed to cancel the curvature of field of the reflecting part accordingly since it is desirable to eliminate such aberrations it would have been obvious to provide the lens of Suzuki in the projection method of Lin in view of Raskar and Tajima as it is desirable to make the best aberration free image as possible.

Art Unit: 2851

15. Claims 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Raskar and Tajima as applied to claim 21 above, and further in view of Gale et al. (US 5,692,820.)

With regards to applicant's claim 26:

As described in more detail above Lin in view of Raskar and Tajima teaches a projection method which includes providing a projection light engine, however Lin in view of Raskar does not specifically teach the details of the light engine other than some generalized components such as a light modulator and an inherent light generator. Gale teaches in figure 8a a light engine for a projector, which includes a light generator (602), a display device (606) and projection optics (605). Gale teaches in column 11 lines 53-58 that by using a projection lens with a bend such as that shown in figure 8a the optical depth and the housing depth can be reduced resulting in a more compact display device. As explained in column 9 line 62 through column 10 line 21 the use of a good lens with the display device of Gale results in a better picture. Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the light engine of Gale with the compact projection lens coupled to an appropriate modulator in the projection method of Lin in view of Raskar and Tajima so that a high quality image can be produced on the display surface while maintaining a thin display.

With regards to applicant's claims 27 and 29:

This is the purpose of the bend in Gale's lens as outlined column 11 lines 53-67 as well as column 12 lines 1-34. See above for the reasons why it would be obvious to use Gale's lens in the projection method of Lin in view of Raskar and Tajima.

With regards to applicant's claim 28:

This is why Gale uses the lens that Gale does in figure 8a as explained in column 9 lines 62-through column 10 lines 21. See above for the reasons why it would be obvious to use Gale's lens in the projection method of Lin in view of Raskar and Tajima.

With regards to applicant's claim 30:

The light generator of Gale is an illumination subsystem (it is a light source such as a lamp), the display is a micro-display (LCD see column 10 lines 1-14 it should also be noted the display in Raskar is an LCD) and the lens is made of a number of lens as described in column 11 lines 28-52 of Gale. Given Gale teaches that this combination of components made specific for the novel projection lens allows the projection light engine to produce a better image while being a compact as possible, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the lens, display device, and light generator of Gale in the projection method of Lin in view of Raskar and Tajima in order to make a better image and a more compact projection system.

16. Claims 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Raskar and Tajima as applied to claim 21 above, and further in view of Nishizawa (US 2004/0032982 as cited in the previous office actions.)

As described in more detail above Lin in view of Raskar and Tajima teaches a projection method using a projection system with image processing. However Lin in view of Raskar and Tajima (specifically Raskar) does not specifically teach that image-processing unit comprises luminance correction stages. Nishizawa teaches in paragraphs 12-14 that it is beneficial for the image processing unit to include a luminance correction stage which individually process different spectral pass bands as claimed in applicant's claims 37 and 38. Nishizawa states that by making these corrections the unnatural image displayed by the prior art can be corrected for. Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the luminance correction of Nishizawa in the image-processing unit of Lin in view of Raskar and Tajima this will allow for a better image with correct luminance.

Response to Arguments

17. Applicant's arguments with respect to claims 1, 3-12, 16-21, 23-30, 34-38, 43, and 44 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2851

The Hiller reference has been replaced with Lin in view of Raskar which utilize a two-dimensional display device and electronic image correcting as is presently claimed, accordingly applicant's argument's are moot in view of the new ground(s) of rejection.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 6,598,976 to Westort et al. teaches in figure 1 a projection system which could be use to reject many of applicant's claims as it includes an aspheric curved mirror (5), is a rear projector and teaches in column 3 lines 39-48 electronic warping of the image to correct for distortion among other things.

The following are publications of applications which appear to be possibly co-owned and/or have common inventors and should be reviewed for potential double patenting when amending the present claims.

US 2003/0231261 to Bassi et al.

US 2007/0035670 to Prior et al.

Art Unit: 2851

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AS



Andrew Sever